

duced the comparatively gentle synclinal between Wallen's ridge and the Clinch river.

The faulting process was not abrupt; though a geologist might think it so, for to him a thousand years is literally as one day, and the whole of the historical period is insignificant. But this process of elevation, fracture and lateral displacement, required a vast length of time. The corrasive force of the streams must have deepened the channel-ways as rapidly as the rocks were raised. It is quite possible that the present system of drainage is as old as Carboniferous times, and that the disturbance producing the faults led to comparatively little change in its direction.

Stated Meeting, September 17, 1880.

Present, 4 members.

President, Mr. FRALEY, in the Chair.

Letters of acknowledgment were received from the Physical Society in Berlin, Jan. 2, 1880 (102, 103, XV, ii); Astronomical Society at Leipsig, Aug. 20 (104, 105); Association for National Science in Würtemberg, April 30 (102, 103, XV, i, ii); Agricultural and Historical Society at Lyons, March 10 (1 to 16, 18 to 20, 22, 24, 25, 27, 28, 32, 33, 35 to 62, 65 to 96, 98); Royal Academy, Amsterdam, Oct. 24, 1879 (102, 103); Massachusetts Historical Society, 30 Tremont Street, Boston, Aug. 12, 1880 (106, List); Public Library, New Bedford, Sep. 1 (106, List); Yale College, Aug. 26 (106, List); University of the City of New York, Sep. 1 (106, List); Astor Library, Sep. 13 (106, List); Regents of N. Y. University, Albany, Sep. 3 (106, List); N. Y. Historical Society, Aug. 23 (106, List); Penn. Historical Society, Sep. 7 (106, List); Maryland Historical Society, Sep. 6 (106, List); U. S. Coast Survey, Washington, D. C., Aug. 21 (106, List); Chicago Historical Society, Aug. 23 (106, List).

Letters of envoy were received from the Geological Survey of India dated Geological Survey Office, Calcutta, March 18, 1880, signed H. B. Medlicott, Supt.; L'Academie Royale des sciences, lettres et arts de Modene, dated July 31, 1880; Geologisch-botanische gesellschaft, Wien, I. Herren-

gasse, Landhaus; Königliche Sachsische Gesellschaft d. W. Leipzig, March 1, and April 27, 1880; Physicalische Gesellschaft zu Berlin, Jan. 1, 1880; L'Académie royale des sciences à Amsterdam, Jan. 31, 1880; and Verein für Naturwissenschaft zu Braunschweig, Aug. 23, 1880. (All through the Smithsonian Institution.)

Donations for the Library were received from the Geological Survey of India [Vols. I to XVII of *Memoirs* (except I, i, II, ii, out of print); Series II to XIII of *Palaëontologica Indica* (Ser. I and II, v, out of print); and Vols. I to XIII, i, of *Records*]; Geological Survey of Victoria; R. Society of Tasmania; Imperial Academy at St. Petersburg; Imperial Academy, Anthropological Society, and Geological Institute at Vienna; Imperial Academy, German Geological Society, Physical Society, and Zeitschrift f. d. ges. Nat. at Berlin; Royal Saxon Society, Observatory, and Zool. Anzeiger at Leipzig; Verein f. Nat. at Braunschweig; Verein f. V. Nat. at Stuttgart; Neues Lau. Mag. at Görlitz; M. Prof. Renéviers at Lausanne; Royal Academy of Lynxes at Rome; Société d'Agriculture, &c., and MM. A. Falsan and E. Chantre at Lyons; Anthropological Society, Museum of Natural History, Annales des Mines, and Revue Politique, at Paris; Linnean Society, and Com.-Geological Society, at Bordeaux; Royal Belgian Academy; Royal Academy at Amsterdam; Victoria Institute, R. Astronomical, Meteorological, R. Geographical, Geological, Zoölogical, R. Asiatic, and Society of Antiquaries, and London Nature; Geological Survey of Canada; Museum of Comparative Zoölogy, at Cambridge, Mass.; Professor Ed. Pickering; Prof. Asaph Hall; American Journal of Science, Prof. Jonathan Edwards, New Haven; Mercantile Library Ass. N. York; Franklin Institute, Journ. Pharmacy, Med. News, Dr. B. H. Rand, Philadelphia; Journal of Mathematics, Baltimore; Smithsonian Institution, Geographical Survey of the Territories, Chief of Engineers, Surgeon General's Office, and National Museum, at Washington; S. W. Burnham of Chicago; Missouri Historical Society; Geographical and Statistical

Society; Revista Científica; Ministerio de Fomento, and Meteorological Observatory of Mexico.

The following record was read from a letter from Mr. John Biddle, dated 1344 Pine Street, Sept. 8, 1880, for correcting the Society's List of Members.

James Biddle, eldest child of Wm. Biddle and Mary Scull, and brother of Edward Biddle (member of the first Colonial Congress); also of Nicholas Biddle (commander of the Colonial frigate "The Randolph"); also of Charles Biddle (member of the Supreme Court); was born Feb. 18, 1731; married Miss Frances Marks, June 30, 1753; died June 14, 1797. He was elected Prothonotary of the County of Philadelphia, Nov. 13, 1788, and appointed Judge C. P. for the County, Nov. 25, 1788.

The death of the Rev. Professor E. B. Andrews at Lancaster, Ohio, Aug. 21, 1880, in the 60th year of his age, was announced by the Secretary.

The death of Professor Samuel S. Haldeman, at Chicques, Lancaster county, Sep. 10, 1880, aged 68, was announced by the President, and on motion of Dr. LeConte, Dr. D. G. Brinton was appointed to prepare an obituary notice of the deceased. Dr. LeConte in making this motion said:

He was an accurate observer and a close student of nature during the earlier part of his life, which he gave to Zoology. Afterwards, when, by the failure of his eyesight, the minute inspection of specimens necessary to progress in any branch of Biology became no longer possible, he devoted himself to Linguistics and Archæology.

It may be here observed, that the correctness in observation and the logical accuracy in reasoning which in these days are the special characteristics of biological and physical research, and which he had acquired by his zoological studies, were in the change of pursuits of great benefit.

He carried into his new studies all the mental advantages which he had previously obtained from his varied investigations in Natural History. The relations of articulate sounds, the changes in sonance of words, their growth and complication by affixes and suffixes, were all studied in reference to the mechanism of the vocal organs, and the results deduced were traced to the combination of those organs with the directing power of the brain, for the expression of intelligent language. But in regard to the minutæ of his contributions to this branch of science, I know but little, and am not qualified to speak. I know only of his successes, with which all his friends sympathized, and of which the nation has reason to be proud.

In fine, he was an example of those rare individuals who, inspired by a true love of knowledge, pursue it according to their ability, without thinking of pecuniary reward or personal approbation. Such are the men who furnish the germs for future advancement in the realms of thought. Happy are those who are able to number them among their friends.

A communication was presented, entitled "Notes on the Cumberland or Potomac Coal Basin, by Howard Grant Jones, M. S."

Mr. Lesley drew attention to a remarkable feature of the section accompanying this paper, according to which both the Mountain limestone and the Mauch Chunk red shale formations are *duplicated*, and that upon a grand scale; the Upper red shale being 375 feet thick; the Upper limestone 301' (followed by 70' of gray shale); the Lower red shale 2000'; and the Lower limestone 475' (underlaid by shale, flints and iron ore, 300'); making the total apparent thickness of N, XI (counting in 200' of green shales over the Upper red shale) between 3700' and 3800', a thickness even greater than at Pottsville in Schuylkill county, Pa. The duplication of the limestone formation in the column ought to have an important bearing upon the sub-division of the sub-carboniferous limestone group in the Western States. It may help to explain some of the prevailing confusion respecting the limestones exposed at apparently different horizons in Northern Pennsylvania.

Mr. Lesley proposed another Greco-Egyptian etymology, viz: *Iaxχος* from [Hor-m-] *axu*, the Sphinx name of the Solar disc on the horizon.

He remarked that *Iaxχος* was the well-known Sun-god of the Eleusinian Mysteries, represented as suckled by Ceres; as Horus is frequently represented in the act of sucking the breast of Isis. The torch-flinging performance along the road from Athens to Eleusis represented no doubt the westward progress of the morning light.

Ceres was the mother of mystery, the darkness out of which the Sun is born, and the underground concealment out of which all vegetable life springs forth. Her name must be connected with the mystical celtic word *Cær*, the root of so large a mythical nomenclature; the equivalent of the full oriental form *Cabar* (or *Cabal*), and the key to the later Cabala. Hundreds of geographical names like Corinth, Carinthia, &c., embody it very plainly.

The destruction of *Iaxχος* by the Titans, as well as their destruction by Zeus, are myths explainable by the obstruction of the Sun's rays by mountains, and the victory of the Sun at the zenith. The part played by mountains in Solar mythology is shown by the ideograph of the name of the Sphinx, Hor-m-*axu*; and is illustrated by the morning admiration of travelers on the Nile. It is much better to seek for the primitive ideas among the every-day phenomena of nature, than among the poetical and metaphysi-

cal inventions of later and more intellectual ages, when the victory of truth over error replaced that of day over night in the language of the initiated. We must come down to the classic age of the XIX dynasty before this spiritualizing process of the poets of the priesthood becomes well authenticated.

The connection of Ormuzd, Horus and the Shemitic *aur*, light, is evident; but the relationships of *lux*, *fax*, and *ox* (oculus, $\omega\zeta$) and of *lux* with $\beta\epsilon\tau\nu$, *ruere*, and of *fax* with $\text{Iax}\chi\omicron\varsigma$ will also repay an effort at development.

The President reported that he had received a letter from Drexel, Harjes & Co., of Paris, advising that the sheet allowed for the receipts of interest on the 3 per cent. French Rentes, belonging to the Michaux Legacy had been filled up. The rules of the French Treasury require that a new sheet and inscription shall be made in the name of the Society. They forwarded the proper petition to the Minister of Finance for that purpose which has been duly signed by the President and Treasurer in the presence of the French Vice-Consul at Philadelphia, and the same duly and officially certified by him as required by the laws of France, and such petition has been sent to Messrs. Drexel, Harjes & Co., at Paris.

And the meeting was adjourned.

Notes on the Cumberland or Potomac Coal Basin. By Howard Grant Jones, M. S.

(Read before the American Philosophical Society, September 17, 1880.)

This field is a long triangular territory of about sixty miles in length, lying along the outside or eastern edge of the great Alleghany uplift, and is situated in Somerset county of Pennsylvania, Alleghany county, Maryland, and Mineral county, West Virginia. Although considered a spur, the basin is rather an overlapping of the Coal strata to the eastward of the Alleghanian fold which demarcates the celebrated Coal fields of those States. It is with Broad Top and an unexplored basin in Alleghany county (New River) the only deposits beyond this line. On leaving Pennsylvania this persistent anticlinal becomes "Savage Mountains," which bend south west towards a geological center at Union, in Maryland, where are pinned together the southern extremities of the several basins of Maryland and Pennsylvania lying parallel to the Alleghanies. The Coal strata here flow over Savage mountain into the Potomac basin, virtually terminating this range in the general elevation. The name and bold characteristics of